

2. Remarks : Claim Rejections – 35 USC § 112

All pending claims were rejected under 35 U.S.C. 112 as failing to comply with the written description requirement. The applicants respectfully traverse this rejection.

With regard to claims 51-53, firstly, single-phase mixed-metal metal oxide particles comprising Cu, In and/or Ga are disclosed in Examples 1 and 8 in the original specification. The first paragraph of Example 1 on page 28 addresses single-phase, mixed-metal, $\text{Cu}_2\text{In}_2\text{O}_5$ particulate materials, and the first paragraph of Example 8 on page 31 addresses single-phase $\text{Cu}_2\text{In}_{1.5}\text{Ga}_{0.5}\text{O}_5$ particulate materials. Thus, all elements of the first basis for objection to claims 51-53 have clear antecedents in the specification.

With further regard to claims 51-53, a method of making single-phase mixed-metal metal oxide particles while pyrolyzing droplets of solutions comprising Cu, In and/or Ga as metal-containing compounds in an oxidizing atmosphere is disclosed in Example 1 in the original specification where a method of preparing single-phase, mixed-metal $\text{Cu}_2\text{In}_2\text{O}_5$ particulate materials by pyrolyzing a solution containing dissolved metal-containing compounds (i.e. copper and indium nitrates) in an oxygen atmosphere is disclosed. The previously entered amendment of 2003 June 27 amended the second paragraph on page 10 of the specification to clarify that the original specification disclosed a method comprising solutions comprising one or more dissolved metals and/or metal-containing compounds and that a particularly useful solution is an aqueous solution of metal salts, such as nitrates. On page 2 of the Office Action dated 2003 July 11 the 2003 June 27 amendment was entered, and an earlier objection related to antecedent bases was withdrawn. With regard to the atmosphere in which one pyrolyzes droplets, the second paragraph on page 11 of the original specification disclosed the use of "...oxidizing gases, such as oxygen and air." Aerosol pyrolysis processes in which powders are formed by pyrolyzing droplets of solutions are discussed in the first paragraph on page 10 of the original specification. Thus all elements of the second basis for objection to claims 51-53 have clear antecedents in the specification.

With further regard to claims 51-53, the Office Action of 2004 March 2 correctly notes that the second paragraph of page 11 of the specification discloses that metal phases are achieved in reducing atmospheres, *not* in oxidizing atmospheres. Claims 51-53 address using an oxidizing atmosphere to prepare single-phase oxide materials, and do not address metal phases or reducing atmospheres.

Accordingly, applicants respectfully submit that claims 51-53 fully comply with the written description requirement.

With regard to claims 54-58, the preparation of mixed-metal particles comprising Cu in metallic phase and In and/or Ga in an oxide phase by pyrolyzing droplets of solutions comprising dissolved metals e.g. Cu, In and/or Ga in reducing atmosphere is disclosed in Example 3 on page 29 of the original specification where multi-phase, mixed-metal, $\text{Cu-In}_2\text{O}_3$ particulate materials were prepared by using a hydrogen / nitrogen atmosphere in place of the oxygen atmosphere disclosed in Example 1 on page 28. These issues are further addressed on pages 11 and 12 of the original specification where beginning on the last two lines of page 11 the specification discloses that reducing atmospheres such as hydrogen / nitrogen mixtures are particularly advantageous for preparing particulates comprising $\text{Cu-In}_2\text{O}_3$ particles comprising Cu in a metallic phase and In in an oxide phase.

As noted above, the previously entered amendment of 2003 June 27 amended the second paragraph on page 10 of the specification to clarify that the original specification disclosed a method comprising solutions comprising one or more dissolved metals and/or metal-containing compounds.

Accordingly, applicants respectfully submit that claims 54-58 fully comply with the written description requirement.

With regard to claims 59-61, the preparation of mixed-metal oxide particles while pyrolyzing droplets of solutions comprising dissolved metals e.g. Cu, In and/or Ga in an inert atmosphere is disclosed in the second paragraph on page 11 of the original specification where multi-phase, mixed-metal, $\text{Cu}_2\text{O-In}_2\text{O}_3$ oxide particulate materials were prepared in an inert atmosphere, namely nitrogen. Claim 59 as presently amended does not address reducing atmospheres.

Accordingly, applicants respectfully submit that claims 59-61 as currently amended fully comply with the written description requirement.

Conclusion

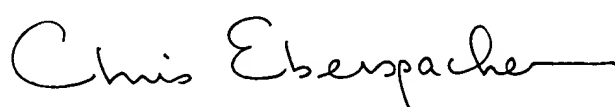
For all of the above reasons, applicants submit that the claims are now in proper form, and that the claims all define patentably over the prior art. Therefore they submit that this application is now in condition for allowance, which action they respectfully solicit.

Conditional Request for Constructive Assistance

Applicants have amended the claims of this application so that they are proper, definite, and define novel matter that is also unobvious. If, for any reason this application is not believed to be in full condition for allowance, applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. '706.03(d) and '707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

The applicants can be reached by telephone at (805) 987-7258.

Very Respectfully,



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2004 June 3

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